

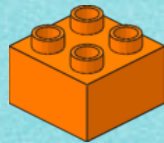
Are you Smart?

- ▶ Make a group of 3 (people you have not worked with)
- ▶ Use only the red and yellow LEGOs
- ▶ **Challenge 1:** 1 minute - Build a duck
- ▶ Compare Ducks
- ▶ Are any exactly the same?
- ▶ Lesson Learned?
- ▶ How did your group work? Things to try next time?
- ▶ How could we document this process? Your reflections?



Are you Smart?

- ▶ **Challenge 2:** Design & Document the largest structure you can balance starting with the Orange 2x2 brick.



- ▶ **Materials:** LEGO Kit, Camera, Wiki Page
- ▶ **Lessons Learned?** About LEGO building, teamwork, problem-solving, & documentation.



Are you Smart?

- ▶ **Challenge 2:** Design & Document the largest structure you can balance starting with the Orange 2x2 brick.



- ▶ **Challenge 3:** Design & Document the largest structure you can balance starting with the Pink 1x1 brick.



- ▶ **Materials:** LEGO Kit, Camera, Wiki Page
- ▶ **Lessons Learned?** About LEGO building, teamwork, problem-solving, & documentation.



Are you Smart?

▶ Lessons Learned 2&3:

- a. Check out how the other groups documented their building as well as their “Lessons Learned” (5 min)
- b. Whole class discussions about what worked well and not as well on Tuesday (5-10 min), especially their method of documentation
 - building LEGOs,
 - teamwork,
 - problem-solving, &
 - documentation



Are you Smart?

► Challenge 4: Build 2 Gether

- a. Each student gets 10 LEGOs
- b. Build a _____
- c. Each student gets to add 1 brick at a time
- d. Students cannot talk or help or tell the others where to place their brick.
- e. Silent walk around (hands behind back)

► **Materials:** LEGO Kit, Camera, Wiki Page

► **Lessons Learned?** About Classifying LEGOs, teamwork, problem-solving, &



Are you Smart?

► Challenge 4: Build 2 Gether Dos

- Each student gets 10 LEGOs
- Build a _____
- Each student gets to add 1 brick at a time
- Students cannot talk or help or tell the others where to place their brick.
- Silent walk around (hands behind back)
- Each pair shares what they built

► **Materials:** LEGO Kit, Camera, Wiki Page

► **Lessons Learned?** About



Are you Smart?

▶ Challenge 4:

- a. Classify the bricks into groups (3 min)
- b. Classify the new brick according to your system (1 min)
 - a. Explain/document your classification system (10-15 min)
- c. Compare your system to the other groups' (5 min)

▶ **Materials:** LEGO Kit, Camera, Wiki Page

▶ **Lessons Learned?** About Classifying LEGOs, teamwork, problem-solving, & documentation.



Are you Smart?



► Challenge 5:

- a. *Solve* - Each of the six students in Mrs. Reyes' class selected three bricks from the bag. Can you figure out which specific bricks each student chose?
 1. All six students selected bricks shaped like rectangular prisms.
 2. No student chose a decorated brick.
 3. If Colin combined the colors of two of his bricks he'd get the color of his third brick.
 4. The number of hubs on one of Colin's bricks is twice the number of hubs on one of his other bricks.
 5. Ashley and Brent selected bricks that are all the same color.
 6. The sum of the number of hubs on two of Ashley's bricks equals half the number of hubs on her third brick.
 7. All the students except for Colin chose bricks that are all the same thickness.
 8. Ethan's bricks can be arranged to form a four by six hub rectangle.
 9. Darcy and Ethan chose at least one brick with hubs arranged in a square pattern.
 10. The colors of Francisco's bricks are related to the United States Civil War."
- b. *Explain* - your method & solution to the other groups
- c. *Compare, Check & Comment* - How did the other groups solve this? Are they correct?

Are you Smart?

- ▶ **Challenge 6?:**
 - ▶ **Lessons Learned?** About Classifying LEGOs, teamwork, problem-solving, & documentation.



Are you Smart?



► Challenge 6:

- a. *Design* - Create your own challenge with only 1 solution
 - 4 students
 - 2 bricks each
 - No more than 6 clues
- b. *Publish* - your clues & solution on your wiki page at the top
- c. *Compare, Check & Comment* - How did the other groups do? Did their clues make sense? Was there only one possible solution? Use the Discussion tab to comment.

Are you Smart?

▶ Challenge 6:

- Each student gets an equal amount of bricks. Build a horse and plow. Each student gets to add 1 brick at a time. Students cannot talk or help or tell the others where to place their brick. (6 min)
- Document your work and construction (10-15 min)
- Compare your page to the other groups' (5 min)

▶ **Materials:** LEGO Kit, Camera, Wiki Page

▶ **Lessons Learned?** About Classifying LEGOs, teamwork, problem-solving, &



Are you Smart?

▶ Will It Stand?

- Each team evenly divides their bricks (1 min) and then build a “reverse” structure - smallest number of stud on bottom, largest on top (5 min)
- Document structure - photos sent to flickr (2 min)
- Reflect on teamwork

▶ **Materials:** LEGO Kit, Camera,

▶ **Lessons Learned?** Teamwork, communication, problem-solving & iteration, & documentation



Are you Smart?

► Barge Challenge:

- Each team evenly divides their bricks (1 min) and then build a “barge” (5 min)
- Test barges w/ pennies (2 min each)
- Discuss alternative designs & iterate
- Barge challenge
- Document your 1st and 2nd barges - photos sent to flickr (2 min)
- Reflect on teamwork

► **Materials:** LEGO Kit, Camera, Wiki Page, bucket or tub

► **Lessons Learned?** Teamwork, problem-solving & iteration, & documentation.



[http://upload.wikimedia.org/wikipedia/commons/5/5f/Barge_conteneurs_\(2\).jpg](http://upload.wikimedia.org/wikipedia/commons/5/5f/Barge_conteneurs_(2).jpg)